

Appln No. 09/459,409
Amdt. Dated February 25, 2004
Response to Office action of September 24, 2003

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REMARKS/ARGUMENTS

In the present application, claims 1-3, 6 and 8-17 are currently pending. In the Amendment:

- independent claims 1 and 16 have been amended to clarify the interconnection of the second communications link from the host system to the first print controller. Support for such amendment is found in section 8 of the present specification entitled "DOUBLE-SIDED PRINTING";

- pending claims 2, 3, 6, 8-15 and 17 remain unchanged. The Applicant appreciates the Examiner's indication of the allowance of claims 8-15 and 17; and

- dependent claims 18 to 21 are newly added, where the subject matter of new claim 18, dependent from amended claim 1, is supported in section 8 of the present specification, and the subject matter of new claims 19 to 21 respectively corresponds to the subject matter of original claims 4, 5 and 7 which were cancelled in the Applicant's previous response to the first Office Action of February 19, 2003.

It is respectfully submitted that the above-described amendments to independent claims 1 and 16 overcome the Examiner's rejections thereof, and consequently the rejections of claims 2 and 6 dependent from claim 1, under 35 U.S.C. §103(a) over the combination of Silverbrook (USP 5,784,077) and Sullivan et al. (USP 4,739,344), and also consequently overcome the rejection of claim 3, dependent from claim 1, under 35 U.S.C. §103(a) over the combination of Silverbrook and Sullivan et al. further in view of Ikenoue et al. (USP 5,251,295) for at least the following reasons.

Claims 1 and 16 have been amended to clarify that in the present invention the second communications link interconnects the first print controller with the host system, such that the first print controller receives descriptions of pages to be printed by both the first print engine and the second print engine from the host system via the second communications link. As described in section 8 of the present specification, this feature of the present invention enables the first (master) print controller to control the second (slave) print controller so as to provide synchronous, and simultaneous, printing with the printheads of both the first and second print engines whilst not imposing undue restrictions on the second communications link with the host system.

That is, by using the first print controller to buffer the page descriptions destined for the second print controller, the first print controller is able to transmit such page descriptions to the second print controller, as recited in new dependent claim 18, with only a short delay and then receive its own page description upon which the second print controller knows that printing can be initiated for both the first and second print engines, thus providing synchronicity. This is possible in the present invention, since the page descriptions themselves are received and stored by the print controllers, rather than the much larger expanded bi-level pages (see section 7.2 of the present specification), such that the transmission of the page description over the fast second communications link does not cause a delay large enough to disrupt the printing process.

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On the other hand, as remarked in the Applicant's previous response, in Silverbrook it is the expanded bi-level pages which are transmitted and stored by the modules 550, where, as clearly seen from Fig. 7 and disclosed at col. 32, line 61-col. 33, line 16 of Silverbrook, this page data for each of the modules 550 is transmitted directly thereto from the digital data link 578 and the RIP 552. That is, the page data for one module 550 is not first stored by a second module 550, as recited in amended claims 1 and 16, and then transmitted by that second module 550 to the first module 550, as recited in new claim 18.

Further, any combination of Silverbrook with Sullivan et al. would not make-up for these deficiencies in Silverbrook. This is because, in Sullivan et al. the data for each of the master and slave controllers is directly transmitted thereto by the host as disclosed at col. 7, line 29-col. 9, line 45 and shown in Figs. 1, 2 and 2a of Sullivan et al. Therefore, even if it would have been obvious to combine Silverbrook and Sullivan et al. to provide synchronisation between the modules 550 of Silverbrook, which the Applicant respectfully submits is not the case as discussed in the Applicant's previous response, it would not have been obvious to one having ordinary skill in the art to further modify this combination to have a first module 550 receive the page descriptions for the second module 550 as in the claimed invention.

Furthermore, Ikenoue et al. does not make-up for these deficiencies in Silverbrook and Sullivan et al., since Ikenoue et al. also does not teach or suggest a first print controller receiving the page descriptions for a second print controller from a host system via a communications link so as to provide synchronisation thereof, as recited in amended independent claims 1 and 16.

Therefore, for at least the above stated reasons, it is respectfully submitted that amended independent claims 1 and 16, and claims 3, 6 and 18-21 dependent from claim 1, along with allowed claims 8-15 and 17, are patentable over the cited references.

The Applicant attaches the required fee for adding three new independent claims in previous response dated May 19, 2003.

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It is respectfully submitted that all of the Examiner's rejections have been traversed. Accordingly, it is submitted that the present application is in condition for allowance and reconsideration of the present application is respectfully requested.

Very respectfully,

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